

## **REMARKS**

### **Summary of the Office Action**

Claims 1-5, 8, 10, 12 and 13 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,435,780 to Flynn ("Flynn").

Claims 6, 7, 9, 11 and 14-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Flynn.

### **Summary of the Response to the Office Action**

Applicants have amended claims 1, 3-5, 8, 11 and 16.

Applicants have canceled claim 2 without prejudice or disclaimer.

Applicants have added new claim 20.

Claims 1 and 3-20 are pending.

### **All Claims Define Allowable Subject Matter**

Claims 1-5, 8, 10, 12 and 13 are rejected under 35 U.S.C. § 102(b) as being anticipated by Flynn. Claims 6, 7, 9, 11 and 14-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Flynn. Applicants respectfully traverse the rejections under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a). Applicants have amended claim 1 to include the features of claim 2. Claim 1 recites "the cutting edges comprise inner cutting edges laying on a first surface of revolution which is in the first direction higher at a larger diameter and lower at a smaller diameter", "at a diameter larger than the inner cutting edges outer cutting edges are laying on a

second surface of revolution which is in the first direction lower at a larger diameter and higher at a smaller diameter” and “a cone angle  $\alpha_1$  is larger than  $65^\circ$ .” Support for claim 1 is provided at, for example, page 5, lines 7-24, and Fig. 4 of Applicants’ specification. In an embodiment of Applicants’ invention, cutting edge 10 includes an outer cutting edge 12, which makes an angle  $\alpha_1$  with the direction of the rotation axis L and which is limited at the inside by a lower limit 13, which is the lowest point of the cutting tooth 5. Inside the lower limit 13 the cutting edge 10 includes an inner cutting edge 14 which makes an angle  $\alpha_2$  with the direction of the rotation axis L. Thus, inner cutting edge 14 and outer cutting edge 12 slope in opposite directions. As the counteracting forces imparted from the workpiece on the cutting tool at the cutting edges thereof are acting on both sides of the lower limit 13 and thus have opposite directions, the resulting force on the cutting tooth 5 in the plane perpendicular to the rotation axis L is reduced, so that the tool is more stable during cutting.

In contrast, as described at col. 3, lines 3-21, and illustrated in Fig. 3, Flynn discloses a end cutting edge 20 including two portions- peripheral end edge portion 70 and interior edge portion 72. Peripheral end edge portion 70 slopes relatively shallowly toward shank portion 14 from the tool periphery to interior edge portion 72. Angle 74, defining the slope of peripheral end edge portion 70, is typically 2-5 degrees. Interior edge portion 72 slopes relatively steeply toward shank portion 14 from end edge portion 70 to intersection with gash 46. Angle 76, defining the slope of interior portion 72, is in the range of 5-25 degrees. Thus, peripheral end edge portion 70 and interior edge portion 72 slope in the same direction.

Accordingly, Applicants submit that Flynn does not disclose at least the features of “the cutting edges comprise inner cutting edges laying on a first surface of revolution which is in the

first direction higher at a larger diameter and lower at a smaller diameter”, “at a diameter larger than the inner cutting edges outer cutting edges are laying on a second surface of revolution which is in the first direction lower at a larger diameter and higher at a smaller diameter” and “a cone angle  $\alpha_1$  is larger than  $65^\circ$ ,” as recited in claim 1.

Claims 3-19 depend from claim 1 and recite the same combination of allowable features recited in claim 1 as well as additional features that define over the applied art. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. § 102(b), of claims 1, 3-5, 8, 10, 12 and 13, and the rejection under 35 U.S.C. § 103(a), of claims 6, 7, 9, 11 and 14-19, be withdrawn and the claims allowed.

Applicants have added new claim 20. Support for new claim 20 is provided at, for example, page 5, lines 34-36 of Applicants' specification. Examination of new claim 20 is requested.

**CONCLUSION**

In view of the foregoing, Applicants submit that the pending claims are in condition for allowance, and respectfully request reconsideration and timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution. A favorable action is awaited.

**EXCEPT** for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. § 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0573. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

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